



TSMC-02-350

April 2, 2004

To: Commissioner for Patents
P.O.Box 1450
Alexandria, VA 22313-1450

Fr: George O. Saile, Reg. No. 19,572
28 Davis Avenue
Poughkeepsie, N.Y. 12603

Subject: | Serial No. 10/757,202 01/14/04 |

Tung-Ching Tseng et al.

METHOD FOR CHEMICAL MECHANICAL
POLISHING OF A SHALLOW TRENCH
ISOLATION STRUCTURE

INFORMATION DISCLOSURE STATEMENT

Enclosed is Form PTO-1449, Information Disclosure Citation
In An Application.


The following Patents and/or Publications are submitted to
comply with the duty of disclosure under CFR 1.97-1.99 and
37 CFR 1.56.

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being
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P.O. Box 1450, Alexandria, VA 22313-1450, on April 12, 2004.

Stephen B. Ackerman, Reg.# 37761

Signature/Date

 4/12/04

U.S. Patent 6,365,520 to Rhoades et al., "Small Particle Size Chemical Mechanical Polishing Composition," comprises CMP slurry for planarization of STI based on a mixture of two ranges of particle sizes.

U.S. Patent 6,261,158 to Holland et al., "Multi-step Chemical Mechanical Polishing," describes a two step CMP process for planarizing metal interconnects with the imposition of a cleansing/neutralization step as intermediate between stages of CMP.

U.S. Patent 6,234,877 to Koos et al., "Method of Chemical Mechanical Polishing," provides a method of controlling the pH of the slurry composition by an intermediate cleansing rinse of the polishing pads with a diluting or buffered solution.

U.S. Patent 6,207,535 to Lee et al., "Method of Forming Shallow Trench Isolation," teaches the thermal hardening of a portion of a third oxide layer prior to CMP of that layer in a STI fabrication process.

U.S. Patent 6,190,999 to Hung et al., "Method for Fabricating a Shallow Trench Isolation Structure," discusses an STI structure formed by a sequence of film depositions and the intermediate removal of the silicon nitride hard masking layer to expose the pad oxide layer.

U.S. Patent 6,143,662 to Rhoades et al., "Chemical Mechanical Polishing Composition and Method of Polishing a Substrate," describes for STI planarization a method of using a CMP slurry mixture of abrasive particles having a mean diameter of between 2 and 30 nm and larger abrasive particles having a mean diameter between 2 and 10 times the mean diameter of the small abrasive particles.

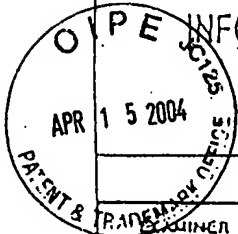
U.S. Patent 6,117,748 to Lou et al., "Dishing Free Process for Shallow Trench Isolation," describes a dishing-free process for STI consisting of a two-step CMP with an oxide slurry followed by a poly slurry that stops at the surface of the nitride layer.

U.S. Patent 5,652,177 to Pan, "Method for Fabricating a Planar Field Oxide Region," encompasses the sequences of forming a field isolation region by depositing an insulating layer, a polysilicon layer, and a nitride layer over a substrate followed by the lithographic patterning and etching of the silicon and nitride layers over the insulating layer.

Sincerely,



Stephen B. Ackerman,
Reg. No. 37761



Form PTO-1449

INFORMATION DISCLOSURE CITATION
IN AN APPLICATION

(Use several sheets if necessary)

Docket Number (Optional)

TSMC-02-350

Application Number

10/757,202

Applicant

Tung-Ching Tseng et al.

Filing Date

01/14/04

Drawn At Unit

U. S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	PUBLICATION DATE IF APPROPRIATE
	6 365520	4/2/02	Rhoades et al.	438	690	7/20/00
	6 261158	7/17/01	Holland et al.	451	63	12/16/98
	6 234877	5/22/01	Koos et al.	451	41	6/7/00
	6 207535	3/27/01	Lec et al.	438	435	3/20/00
	6 190999	2/20/01	Hung et al.	438	424	9/14/98
	6 143662	11/7/00	Rhoades et al.	438	690	2/18/99
	6 117748	9/12/00	Lou et al.	438	400	4/15/98
	5 652177	7/29/97	Pan	437	69	8/22/96

FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
					YES	NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance with MPEP § 609; Include copy of this form with next communication to the applicant.